10. Permutations

Program Name: Permutations.java Input File: permutations.dat

A permutation of a word is one in which the letters have been shuffled but the set of letters do not change. Given a word, find out how many distinct permutations of the word there are. If two permutations are lexicographically equivalent, they are not distinct.

Input
The first line of input contains T, the number of test cases.

The next T lines each represent a test case. Each test case consists of a single alphabetical lowercase word.

Output
For each test case, print the number of distinct permutations of the word there are.

Constraints
```
1 <= T <= 50
1 <= number of permutations <= 10^9
```

Example Input File
```
3
tall
splat
bug
```

Example Output to Screen
```
12
120
6
```

Explanation of Output
The word *tall* has the following 12 distinct permutations: *tall, tlal, atll, altl, ltal, latl, lalt, ltla, llat, llta, allt, tlla*.